V 88/2

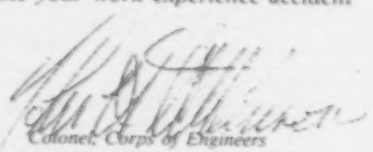
A Volunteer's Guide to Working Safely

D 103.6/5:

READEX MICRO

best copy available

I want to talk with you about safety at the lake project. This booklet has been prepared as a guide to help you work safely. As a guide, it serves as a reference source from which safe work practices can be developed. Accident prevention is, of course, the purpose of the guide. Accident prevention happens only when the people put proven safe work procedures into practice. Accidents and injuries result in personal suffering and add to the cost of the job being done. We do not want either of those situations to occur during your volunteer service with us. I know I can count on each of you to make your work experience accident free.



Colonel, Corps of Engineers
District Engineer

Contents

Introduction 1

Outdoor Safety Tips 2
- Storms 2
- Hypothermia 3
- Clothing 6
- If You Must Smoke 6
- Working in Back Country 7

Lifting and Carrying 8
- Lift It Right 8
- Carry It Right 9

Hand Tools 10
- Chopping Tools 10
- Cutting Tools 13
  - Bow Saws 13
  - Drawknives 13
  - Files 13
  - Bars 14
  - Shovels 14
  - Chain Saws 15

Vehicle Travel 16

Poison Plants, Insects, and Snakes 17
Ivy, Oak, and Sumac 17
Rocky Mountain Spotted Fever Ticks .. 18
Chiggers 19
Black-Widow Spiders and Scorpions ... 19
Bees, Wasps, and Yellow Jackets 20
Snakes 21

Water Safety 22
Water Safety Hazards 23
Weather 24

In Case of an Accident 25
Emergency Telephone Numbers 26

Introduction

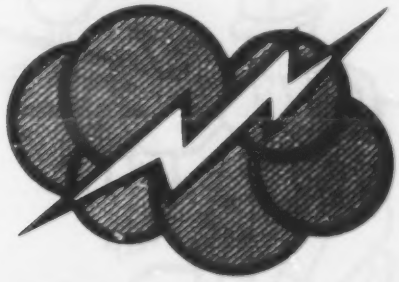
The applicable sections of the Army's Safety Code; Occupational Safety and Health Administration Regulations, and other related Federal agency standards, must be followed in work activities. New employees and volunteers will be given safety instructions before beginning work. They will be trained or tested to assure that they are able to competently use all of the tools required for the job. Be safety conscious at all times.

Outdoor Safety Tips

Many of you will be working in an outdoor env
ment that you might be unaccustomed to. The fo
ing tips might help you to work more safely i
out-of-doors.

Storms

- Lightning storms can be severe in the lake vic
  Storms can appear without notice, blowing in
  the lake in minutes. When lightning is imm
  don't take chances.



- If you are boating, get off the lake immediat

- Sit or lie down if in open country. Avoid grouping together.
- Avoid large or lone trees.
- Avoid tops of ridges, hilltops, wide open spaces, ledges, outcrops of rocks, and sheds or shelters in exposed locations.
- Keep away from wire fences, telephone lines, and metal tools. If absolutely necessary to work on telephone line with a lightning storm in the distance, the line shall be grounded in the direction of the storm before repairs are attempted.
- Check lightning-protection installation at beginning of season and also after direct strikes.

Hypothermia

Hypothermia is the rapid, progressive mental and physical collapse that occurs when a person's body is chilled to the core. It is caused by exposure to cold, aggravated by wet, wind and exhaustion. It occurs most often when the temperature is between 30 and 50 degrees—making it hard for people to accept its danger.

Cold kills in two distinct steps: (1) exposure and exhaustion, and (2) hypothermia. Exposure occurs when your body begins to lose heat faster than it produces it. To compensate, you either exercise to stay warm or your body makes involuntary adjustments to preserve

normal temperature in the vital organs. Either of these responses drains your energy reserves until they are exhausted.

Symptoms

Lowered body temperature affects the brain, depriving you of judgment and reasoning power. (You may not realize what is happening.) You can have uncontrollable fits of shivering; vague, slow or slurred speech; memory lapse or incoherence; fumbling hands; frequent stumbling, drowsiness; apparent exhaustion, and inability to get up after a rest.

These symptoms indicate the various stages of hypothermia. Your internal temperature is sliding downward. Without treatment, hypothermia will lead to stupor, collapse and death.

Treatment

Treatment must be immediate. The victim may deny being in trouble. Believe their symptoms. Get them out of the weather. If they are only mildly impaired, give warm drinks, keep awake, get them into dry clothes. If hypothermia is in an advanced stage, put victim between two warmth donors in a warm sleeping bag after removing clothes.

Defense

The best defense against hypothermia is to avoid exposure. Recognize hypothermia weather and dress for it. Stay dry and protected from the wind. If you cannot stay dry and warm under existing weather conditions with the clothes and equipment you have to get out of the weather.

The dangerous thing about hypothermia is that often the victim doesn't realize what is happening. They may feel fine, but the fact may be that exercising is the only thing preventing going into hypothermia. When they stop, the rate of body heat production instantly drops by 50 percent or more. Violent shivering may begin and the victim may slip into hypothermia in a matter of minutes.

Clothing

- Wearing the proper clothing for the job you are doing or the area in which you are working can make the difference between an enjoyable and a miserable experience. The following common-sense suggestions will aid your choice of personal equipment for steel-toed working out-of-doors.
- Work boots are required for trailer maintenance crews. Tennis shoes may not be worn!
- Select clothing and nonskid, laced boots suited to the country, climate, and the job; rubber boots for snow, hightopped shoes for snake country.
- Wear cuffless trousers.
- Wear leather gloves for all field work.

If You Must Smoke

Smoking raises the level of carbon monoxide in your bloodstream, reducing the blood's oxygen-carrying capability by up to 40 percent. This can severely limit your stamina due to muscles robbed of needed oxygen.

- If you must smoke, stop and sit down. Don't smoke while riding, working, or walking.

- Use a flat rock as your ashtray or dig down to mineral soil with your heel.
- Crush your smoke dead out before you move on.
- Don't leave unsightly filters behind. Deposit them in the trash container.

Working in Back Country

- Choose safe travel routes and stream crossings.
- Avoid traveling in snag areas in windy weather.
- Make sure of secure footing and safe working positions.
- Always be on guard against injury from falling trees, snags, limbs, rolling logs, or rocks. Do not run blindly if you hear a rolling rock, log, or tree. Determine the direction of fall, then get out of the path.
- Be sure other workers know where you are working.
- Wear sunglasses or safety glasses in brushy country for eye protection.
- Watch your step. Rocky slopes are treacherous. Have one hand free, preferably on the uphill side, for protection against falls or obstructions.
- Walk—do not run—down slopes.
- Keep track of time and weather.

Lifting and Carrying

Lift It Right

- Put one foot alongside the object and one foot behind.
- Keep your back straight. That doesn't mean vertical—just straight.
- Get a good, firm grip with the palms of your hands. A finger grip is weaker and can slip.
- Draw the object close to you, and be sure your body weight is centered over your feet.
- Lift straight up by straightening your legs. This will put the strain on the stronger leg muscles, not your back.
- Avoid twisting as you turn with a load. Shift your feet instead. If you intend to lift and turn with a load, point the forward foot in the direction of movement before you lift.
- Don't try to lift something above waist level in one motion. Set the load down on a table or bench, then change your grip for lifting higher.
- Putting the object down is easy, and it can be just as safe. Simply follow the lifting procedure—but in reverse.

Carry It Right

- Be sure you have firm footing. Watch out for tripping or slipping hazards in your path.
- Be sure you can see where you're going no matter where you are—especially on stairs.
- Don't let a light load make you careless. A sudden move or twist can still cause you to pull a muscle—and that's painful no matter how you do it.
- Carry pipe, rail, lumber or any other long object on your shoulder. Keep the front end high, so you don't whack someone who's not watching where they're going.
- When you hand an object to another person, be sure they have a good grip on it before you let go.
- If two or more carry a load, decide ahead of time how to handle it. Check your route for obstructions and slipping and tripping hazards.

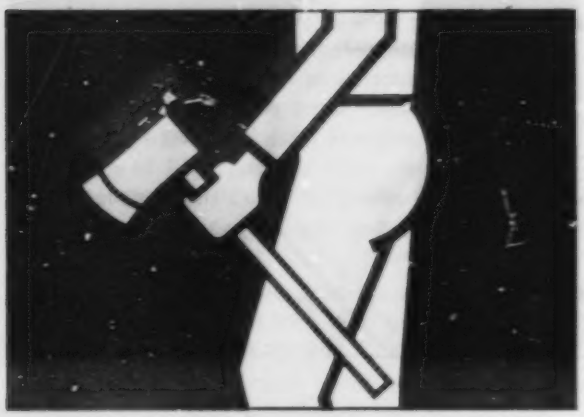
Hand Tools

- Use the right tool for the job. Substitutes can damage work—and they can be dangerous.
- Keep tools in good condition and check them over before you use them. If the heads on striking tools are mushroomed or burred, have them dressed. Replace splintered, broken or loose handles before you use the tool.
- Put tools back when you're finished. That way, you won't have to worry about them tripping you—or somebody else. You'll know where to find them when you need them, and there's less chance of damage.
- Carrying tools in your pocket—especially sharp or pointed ones—is dangerous. What if you trip or slip? Use a kit or tool belt.

Chopping Tools

Chopping tools include axes, adzes, brush hooks, hatchets, machetes and Pulaskis. These few pointers for using chopping tools will help you complete your job efficiently and safely.

- Select the right tool for the right job. See that it is in good condition (good handle and sharp).



- When walking, stay at least 6 feet away from your companion.
- Protect the edge of the tool with a sheath when in transport to prevent accidental cuts.
- Carry the tool in hand on the downhill side when walking in steep terrain.
- Never cut toward any part of your body or toward another worker.
- Keep ample distance between individual workers—not less than 10 feet.

- Avoid cutting between your feet. The tool may be deflected in unpredictable directions while going through the material or may catch a hanging vine or twig. Preferably move your body to enable you to cut to the side and away from any part of your body.
- When cutting brush, start with the small material, which could deflect the tool when you swing for the larger items.
- When striking at dried out wood, be especially careful. It could be as hard as stone and may cause your tool to glance into your feet.
- When trimming limbs from a fallen tree trunk, stand on the side opposite the limb.
- Carry an axe by gripping the handle just behind the head and turning the sharp edge outward. Never carry an axe over your shoulder.
- Do not use an axe as a maul or as a wedge. Axe heads are not made for such use and will split or shatter at the eye if abused in this way.
- Be alert at all times. Try not to let your thoughts wander away from what you are doing.

Cutting Tools

Bow Saws

- When inserting a blade in a bow-saw frame, keep hands and fingers in the clear when the tension lever snaps into or against the saw frame.
- When removing a bow-saw blade from the frame, stay clear of the blade.
- Carry bow saw over the shoulder, with blade to the rear and guarded.

Drawknives

- Cutting edge shall be sharp and free of nicks, with handles in place.
- Material being worked shall be at working height, firmly anchored and held steady. Drawknife shall not be used on material being braced by worker's knees.

Files

- Equip file with handles and knuckle guards before using on cutting edges.

- Wear a leather glove when using a file to sharpen cutting tools.
- Discard a dull file or one with bent tang.
- Keep file free of oil or grease. Discard files with hard spots.

Bars

- Secure fulcrums and toeholds to avoid mashed fingers and toes.
- When prying, grasp bar to place it, then push with palms. Keep foot or other part of body out of line with bar.
- Lay bar flat and in the clear when not in use on the job, such as beside materials or at foot of a wall.
- Discard bent or twisted bars.

When applying leverage, keep body out of danger in case the pry blocks, or load should slip.

Shovels

- Shovel should be kept sharp.
- Should not be used as a pry bar.
- Legs should be used as a fulcrum.

- Before using, check handles for splits, cracks, and slivers. Discard it if defective.

Chain Saws

- Wearing safety apparel is mandatory! This includes goggles, gloves, hard hat, and steel-toed shoes.
- Clear away brush, rocks, or anything else in the working area which might hinder your movements.
- Check to make sure there is no one in the vicinity who might be endangered by a falling tree or a log rolling after it is cut.
- Stop the engine between cuts, when changing your position or footing, or when carrying the saw from one place to another.
- When taking a saw from one place to another, grasp it firmly in one hand and carry it at your side with the cutting bar facing backward.
- Be especially alert when the chain saw engine is running. The noise can drown out warning voices or sounds.
- Look for metal in logs such as nails or wire.
- Be especially cautious when operating a saw in wet, slippery weather or where footing is unsure.
- Have a second person within calling distance whenever working with a chain saw.
- Handle cutting chain carefully at all times.

Vehicle Travel

- Wear restraining belts and harness whenever provided.
- Adjust the headrest to prevent whiplash if struck from the rear.
- Vehicles owned or leased by the Corps of Engineers may only be driven by Corps of Engineers employees with a valid state driver's license. Volunteers are not allowed to drive government vehicles.

Poison Plants, Insects, and Snakes

Ivy, Oak, and Sumac

Have one of the rangers help you to identify these plants. Highly sensitive persons should not be exposed. When working in affected areas, employees should:

- Fasten trouser legs closely over boot tops.
- Wear gloves, and keep them away from face or exposed parts of the body.
- After work, wash exposed parts thoroughly with thick soapsuds. Yellow laundry soap is best in hottest possible water.
- Clean tools with cleaning solvent before putting them away.
- Wash exposed clothing in thick, hot suds separately from other clothes.
- Immunization or application of body ointments or salves is recommended.

Rocky Mountain Spotted Fever Ticks

Ticks are carriers of agents that cause Rocky Mountain spotted fever, Colorado tick fever, tick paralysis, Lyme Disease, and tularemia. When working in an area likely to have infected ticks:

- Wear clothing that fits tightly at wrists, ankles, and waist. Each outer garment should overlap the one above it—cover trouser legs with high socks or boots and tuck shirttails inside trousers.
- Search the body repeatedly (rest periods, lunch, etc.), especially hairy regions and inside clothing, as ticks seldom attach themselves within the first few hours.
- Remove any ticks that may have become attached. Do this with your fingers or tweezers. Grasp the tick as close as possible to the point of attachment and pull gently and repeatedly. Do not jerk it loose, as the mouth parts will often break off and remain embedded in the skin. This could cause infection. Treat the bit wound with an antiseptic and wash your hands thoroughly with soap and water. NOTE: Do not try to burn the tick or cover it with heavy oils.

Chiggers

- Avoid sitting on ground or on logs and avoid low vegetation when practicable.
- Apply powdered sulfur to legs and hands.
- Bathe in hot, soapy water.
- Use insect repellents such as dimethyl pthalate, indalone.

Black-Widow Spiders and Scorpions

In black-widow spider areas, you should:

- Wear work gloves.
- Turn them inside out after placing them on ground temporarily.
- Inspect material before handling.
- Be careful in outdoor toilets.
- If any bite shows rapid inflammation and pain, see doctor.

Bees, Wasps, and Yellow Jackets

Prevention

- Persons who are known to be allergic to insect stings shall obtain vaccine and/or allergy medication before going into the field.
- Wear long-sleeved shirts with close-fitting collar and sleeves with the trousers tucked in boots.

First Aid

- Remove stinger if possible.
- Apply paste of baking soda and cold cream.
- Cold applications will relieve pain and calamine lotion will relieve itching.
- Take antiallergy medication if reaction is severe.
- If unusual reaction, apply constricting band above bite, apply cold packs, and rush to doctor.

Snakes

Prevention

- Wear high boots in poison snake country.
- Be observant around places obscured by foliage or otherwise when walking in rocky country or climbing ledges.
- Use a bar for moving materials and timbers that have been stacked or piled in snake areas. Do not put hands under any stored material where snakes might be present.
- Take care not to step over any logs. Step on them and look down before stepping off.

First Aid

- If bitten, remain quiet and, if possible, avoid movement under your own power.
- If necessary to walk, move slowly with frequent rests.
- Snakebite kits should be used only if unable to get to a doctor or hospital within 2 hours.

Water Safety

Your job as a volunteer may require you to work in or near the lake. Any time you are working around the lake you have an additional responsibility to care for yourself and others to prevent drownings. Each year hundreds of people, primarily visitors, drown at our lakes because they didn't take this responsibility seriously.

Learning to swim is your best defense against drowning. Be comfortable with being in the water; at the very least, learn how to keep your body afloat and propel it through the water to safety. Don't just assume that you can do this--you may find out the hard way that you can't.

Since most drowning victims enter the water fully clothed, take time to learn how clothing can help you survive. Contrary to popular belief, clothing—including shoes and boots—will not cause you to drown, but can help you survive if you know how to use the air trapped in it to help you float.

When you swim, never swim alone; the buddy system does save lives. And, swim only in areas designated for swimming; areas free of submerged objects, boats, and deadly underwater currents.

PFDs (personal flotation devices) are the best insurance

you can have if you're on or around the water—though unfortunately many of us don't take them seriously enough. The fact is, simply wearing a PFD can save swimmers as well as non-swimmers who are suddenly in the water and may be unconscious, fatigued, in shock, surprised, panicked—or all of the above. Be sure you have the proper type of PFD and wear it; once you're in the water, it may be too late to think about putting it on.

Remember: Your PFD is a life saver—but only if you use it.

Water Safety Hazards

Dams with their power houses, spillways, and locks are a recognizable hazard. It is important to stay clear both above and below the dam. Dangerous currents and turbulence can exist in both places. In many states, it is against the law to boat close to a dam. The Corps of Engineers marks their dams with visual aids such as signs, buoys, and lights to provide warning to boaters.

Another unrecognized hazard to watch out for around dams and impounded waters is power lines. If the aluminum masts and/or metal rigging of your sailboat contacts, or even comes close to, power lines, you could be electrocuted. In some areas, buoys are placed in the water below power lines to alert boaters.

Be especially watchful for rocks, logs, snags, or other objects that lie under the surface of the water, as well as other boats or swimmers in the area. Pool fluctuations can add new submerged hazards to previously safe water sports areas. If you notice floating debris or any other object in the water, slow down and be extra alert.

Weather

It takes just a few minutes to check the weather forecast, but these minutes may save you from an accident if you get caught in an unexpected storm on the water. Before shoving off, check to see if a red flag is flying near the control tower at the dam. If the flag is flying, winds are 18 m.p.h. or more and you should stay out of open water. Remember, if the sky looks threatening, stay in.

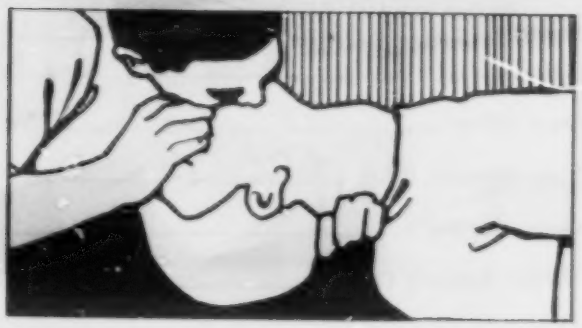
If a storm blows up while you are out on the water, the following tips may prevent an accident:

- Head into the waves at an angle.
- Reduce your speed.
- Seat your passengers in the bottom of the boat.
- Make for the nearest shelter on shore.

In Case of an Accident

This guide was prepared to help insure that an accident doesn't occur. However, volunteers should know what to do just in case an accident does happen.

- Administer first aid if there is an injury and send for an ambulance if the injury appears serious. Do not go for help if the victim is not breathing. Administer CPR immediately.
- Report the accident or injury to your supervisor immediately.
- Don't let an accident, even one that is seemingly insignificant, go unreported. Even a minor injury may cause problems at a later date.



Emergency Telephone Numbers

(Don't Wait for an Emergency—
Fill in Numbers Now)

Rescue Squad _____

Emergency Medical Team _____

Hospital _____

Hospital _____

Sheriff _____

(County) _____

Sheriff _____

(County) _____

State Police _____

State Forester (Fire) _____

Game Warden _____

District Ranger's Office _____

U.S. GOVERNMENT PRINTING OFFICE: 1989 654-305 09029

Notes

US Army Corps
of Engineers